

7-31-12

# MULTIPLYING & DIVIDING BY POWERS OF 10

(10 w/ an exponent)

$$10^2 = 10 \times 10 = 100$$

$$10^3 = 10 \times 10 \times 10 = 1000$$

$$10^6 = 10 \times 10 \times 10 \times 10 \times 10 \times 10 = 1,000,000$$

$$10^1 = 10$$

$$10^0 = 1$$

\* \* The exponent tells the # of zeroes  
(only when 10 is the base #)

\* \* When Multiplying by Powers of 10, move the  
dec. pt. to the RIGHT according to the  
exponent (the # of zeroes)

$$\text{Ex: } 52.\overset{\times}{\underbrace{000}} 10^3 = 52,000$$

$$\text{Ex: } 4.\overset{\times}{\underbrace{635}} 10^2 = 463.5$$

$$\text{Ex: } 0.\overset{\times}{\underbrace{8000}} 10^4 = 8,000$$

\*\* When DIVIDING by Powers of 10, move the dec. pt. to the LEFT according to the exponent.

$$\text{Ex: } \underbrace{52}_{\text{dec. pt.}} \div 10^3 = .052$$

$$\text{Ex: } \underbrace{4.635}_{\text{dec. pt.}} \div 10^2 = .04635$$

$$\text{Ex: } \underbrace{0.0008}_{\text{dec. pt.}} \div 10^4 = .00008$$

$$\text{Ex: } \underbrace{0.23}_{\text{dec. pt.}} \div 10^3 = .00023$$

8-1-12

# METRICS

K	H	D	b	d	c	m
1000	100	10	m	0.1	.01	.001
			L			
			g			
			1			

Length - meter - ht. of a doorknob  
width of a door

km - .621 mi (a little more  
than  $\frac{1}{2}$  a mile)

cm - pinky width

mm - thickness of a dime

Capacity - liter

2 L soda bottles ( $1\text{ L} = \frac{1}{2}$  of 2L)

water bottle -  $\frac{1}{2}$  Liter

Weight - gram

1 g - paper clip

1 kg - 2.2 lbs.

# METRIC CONVERSIONS

\*\* Multiply or Divide by Powers of 10  
Multiply when going from lg. to sm. units  
→

Divide when going from sm. to lg. units  
←

Ex:  $5 \text{ km} = \underline{5000} \text{ m}$

K H D b d c m  
↑      →      ↑

$5 \times 10^3 = 5000$

Ex:  $9647 \text{ mg} = \underline{\hspace{2cm}} \text{ kg}$

K H D b d c m  
↑      ←      ↑

$9647 \div 10^6 = .009647$